



# L1 and L2 dialects: Where the action is

Dennis R. Preston

Este estudio analiza una situación de inmigración internacional y nacional en la que hablantes de español mexicanos y sus descendientes se han trasladado a zonas del sur de Michigan, en la región de los grandes lagos de los Estados Unidos. Se trata, en su mayor parte, de migrantes agricultores, procedentes de México o de Texas y que se han asentado en Michigan.

This study considers such contact in an international/national immigration situation in which Mexican Spanish speakers and their descendents have moved to areas in southern Michigan, in the Great Lakes area of the United States. They are migrant agricultural workers, from Mexico or Texas, who have settled in Michigan.

**Keywords:** dialects; languages in contact; Mexican-Americans; Michigan; Spanish; vowel system

When people immigrate and acquire a new language (and pass it on to their offspring), the overall situation is not only one of language acquisition but also one often described as “languages in contact.” Since all people actually speak dialects (or, at an even finer level of granularity, idiolects), however, the research here has as its goal “dialects in contact” (with apologies to Trudgill 1986), specifically dialects in contact across language boundaries.<sup>1</sup>

This study considers dialect contact in an international/national immigration situation in which Mexican Spanish speakers and their descendents have moved to areas in southern Michigan, in the Great Lakes area of the United States (Figure 1). They are, for the most part, migrant agricultural workers, from Mexico or Texas, who have settled in Lansing, Michigan and in and around Benton Harbor, Michigan (Figure 2). The Mexican American community in Lansing is long-settled, but the Benton Harbor community is much younger, and the city is about 95% African American. In general, the first generation immigrants to

Michigan in both areas are fluent speakers of Spanish, the second generation fair to good speakers, and the third generation, by and large, has little or no proficiency, though some are acquiring Spanish as a heritage language in a variety of educational settings.



Figure 1. The research area of southern Michigan; see Figure 2



Figure 2. The Benton Harbor (left) and Lansing (right), Michigan research areas

One long-standing second language acquisition (SLA) perspective that might be adopted in investigating the English language of these

originally Spanish-speaking groups is the determination of the L1 (Spanish) and L2 (English) systems, their comparison, and a prediction of the learner/contact outcome. Since the concern of this paper is pronunciation, Figures 3 and 4 would be essential to such an approach.

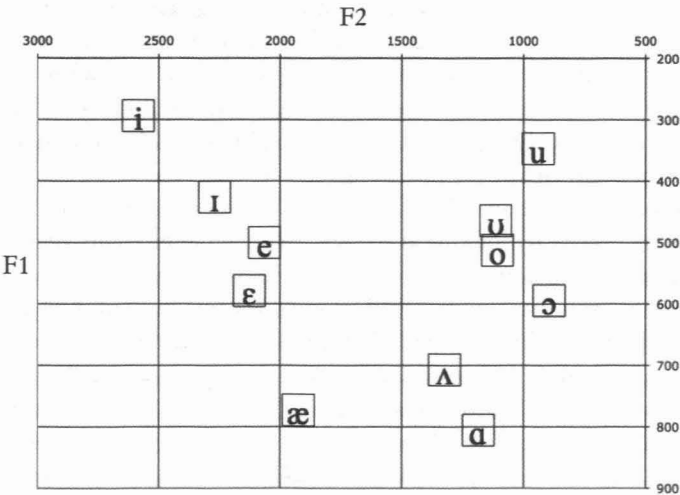


Figure 3. Normalized F1/F2 means scores of the Peterson and Barney (1952) and Stevens (1998) American English vowel data<sup>2</sup>

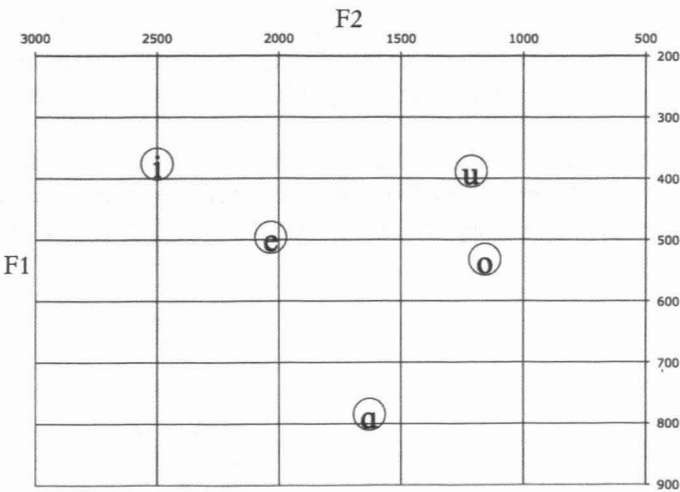


Figure 4. Normalized F1/F2 means scores of two Mexican American (South Texas) Spanish speakers' vowel data provided in NORM (Thomas and Kendall 2007)<sup>3</sup>

There are numerous research programs that tell us how to look at such contrasting systems by overlaying them on one another,

characterizing the phonetic and phonemic features involved, suggesting developmental pathways of one sort or another, and making predictions about or explaining the outcome. I will not outline that history here; Eckman (2004) is an excellent survey.

This study assumes that features of the first generation's English system, including those that are contributed from Spanish, may be carried over into an ethnic variety in later generations, even when they have little or no proficiency in Spanish (e.g., Dubois and Horvath 2003 for Cajun varieties of English in Louisiana and Fought 2003 for Hispanic varieties in California).

Can a study of L1 and L2 influences in the area of pronunciation be made more precise by looking at the way in which immigrants adapt to a particular speech community in learning its vowel system? Previous research has most often underspecified what is being learned. Linguists and nonlinguists alike pretend that such abstractions as "Dutch," "German," "English," "Spanish," "Japanese," etc... exist, usually based on some sort of established or perceived national norm, but I doubt that even in second language classrooms is such a norm consistently presented. American English (AE) has no such norm, in spite of the unfortunately well-accepted myth that some sort of variety known as "General American" exists (e.g., Preston 2005), and the system shown in Figure 3 is often taken to be representative of it, but I will refer to it throughout as "P&B" (i.e., Peterson and Barney), rather than "General American." When people learn on the streets, it is unlikely that they will acquire some such national norm (even if it existed), and the streets of Michigan are no exception.

The P&B system of Figure 3 was not the one Mexican Americans (hereafter "MA") would have found in much of Michigan, particularly Lansing. Figure 5 is a typical example of the one they would have encountered.

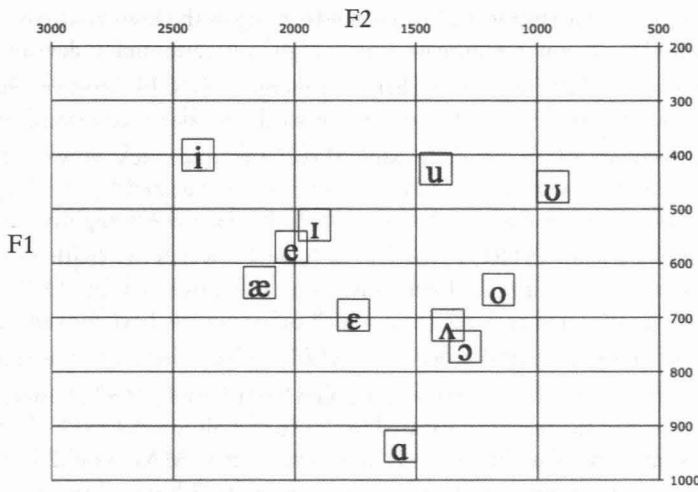


Figure 5. Normalized F1/F2 means scores of “B. Einhorn,” European American female, Grand Rapids, Michigan, USA; data provided in PLOTNIK (Labov 2009); normalized with the “Labov ANAE (speaker extrinsic)” method in NORM (Thomas and Kendall 2007)

Figure 5 shows the Northern Cities Shift (NCS), a rotation of the lax vowels in the large, urban centers of the Inland North of the US, starting in the east in Syracuse and Rochester, New York and spreading along the Great Lakes as far west as Minneapolis/St. Paul Minnesota; the major cities along chain of influence are Buffalo New York, Cleveland and Toledo Ohio, Detroit, Lansing, and Grand Rapids Michigan, Chicago Illinois, Milwaukee and Madison Wisconsin. Figure 6 shows the direction of NCS vowel changes from the P&B system, which, we have good reason to believe, was very similar to the older, pre-NCS system in Michigan (Ito 1999).

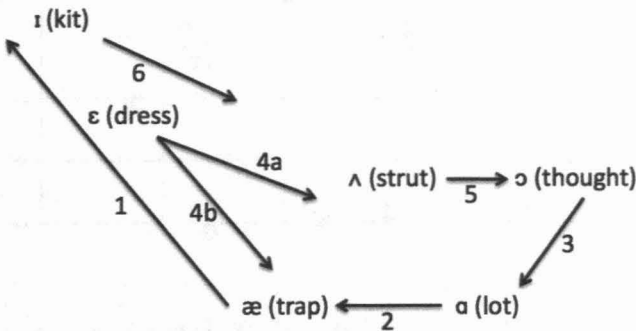


Figure 6. The direction of vowel changes in the NCS

Step one in the shift is the raising and fronting of the low-front vowel (/æ/ TRAP)<sup>4</sup>, shown in Figure 6 rising as high as /ɪ/, although it develops a centering offglide ([ə]) so no chance of merger arises. In step two, the low-back AE vowel (/ɑ/ LOT), moves forward into the space vacated by the movement of /æ/ and, in step three, the mid-back vowel (/ɔ/ THOUGHT) lowers and fronts into the position vacated by /ɑ/. Step four is divided; the mid-front vowel (/ɛ/ DRESS) lowers slightly and backs towards /ʌ/ (STRUT) (path a) or lowers towards /æ/ (path b). It is not entirely clear if /ɛ/ is being pushed by the movement of /æ/ into its space or attracted to areas from which other vowels have moved. In step five, the mid central vowel (/ʌ/ STRUT) backs towards the area vacated by /ɔ/. Finally, in step six, the high front vowel (/ɪ/ KIT) lowers and backs into the territory vacated by /ɛ/ (e.g., Labov 1994:191).

If something like Figure 5 is the system that MAs would have confronted, we should use it and not some putative AE vowel system in any study of their acquisition of English and their passing it on to descendants in Lansing and perhaps in Benton Harbor as well, although smaller cities and towns outside the larger cities in the industrial or Great Lakes north of the US seem to have developed the shift later (e.g., Gordon 2001). Figures 7 and 8 illustrate the importance of this by showing the contrasts between the Spanish system (Figure 4) and the Peterson and Barney (Figure 3) and NCS systems (Figure 5), respectively.

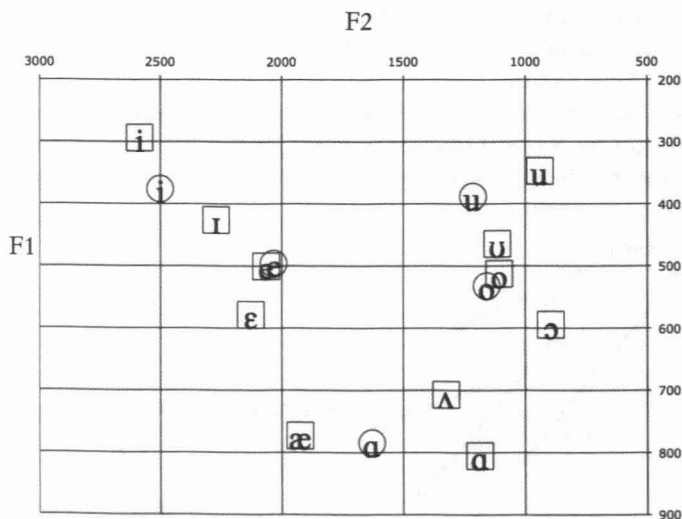


Figure 7. Spanish (Figure 4, circles) and P&B (Figure 3, squares) norms

What predictions can be made on the basis of the comparison of the Spanish system with the P&B system as opposed to a comparison with the NCS system? If the Spanish system is compared to the P&B, we might expect the following:

1) Spanish /i/ is between P&B /i/ and /ɪ/, and one might expect difficulty in acquiring the contrast.

2) Although Spanish /e/ is very close to P&B /e/, it is also close to /ɛ/, and one might expect difficulty in acquiring the contrast, particularly if the diphthongal quality of /e/ is not acquired.

3) Spanish /a/ is in the middle of the vowel space of P&B /æ/, /ɑ/, and /ʌ/, and one might expect difficulty in acquiring the contrasts.

4) Spanish /o/ is close to P&B /o/, /ɔ/, and /ʊ/, and one might expect difficulty in acquiring the contrasts.

5) Spanish /u/ is close to P&B /u/ and /ʊ/, and one might expect difficulty in acquiring the contrast.

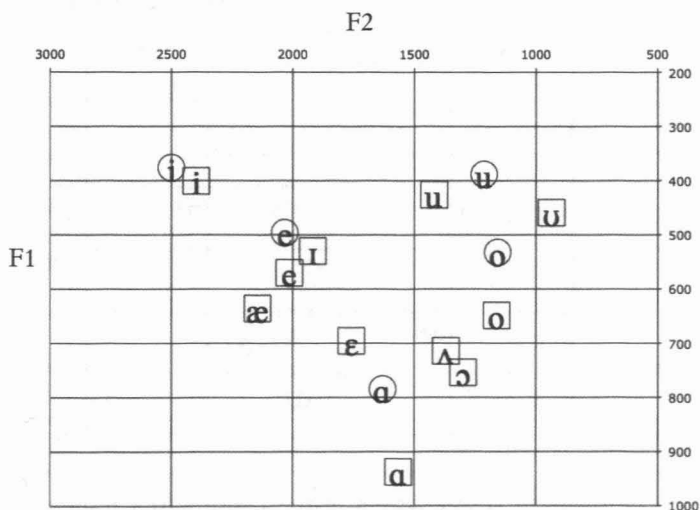


Figure 8. Spanish (Figure 4, circles) and NCS (Figure 5, squares) norms

The comparison to the NCS system suggests other outcomes:

1) Spanish /i/ is close to NCS /i/, and one would not predict the difficulty with the contrast between /i/ and /ɪ/ predicted in the P&B system.

2) Spanish /e/ is close to NCS /e/, /ɪ/, and /æ/, and one would predict difficulty with these contrasts, not with /e/ and /ɛ/, as predicted for contact with the P&B system.

3) Spanish /a/ is in the middle of the vowel space of NCS /ε/, /æ/, /a/, and /Δ/, and one would predict difficulty with these contrasts, different from the P&B prediction on the basis of the much lower /ε/ of the NCS system.

4) Spanish /o/ is in the middle of the NCS /o/, /u/, and /ʊ/ vowel spaces, and one might expect difficulty in acquiring the contrasts. It is unlikely to be also confused with /ɔ/ as in the P&B system, since that vowel has lowered and fronted in the NCS.

5) Spanish /u/ is close to NCS /u/ and /ʊ/, and one might expect difficulty in acquiring the contrast, just as in the P&B contrast.

How have the Spanish language heritage immigrants to southern Michigan dealt with their new linguistic context? Figure 9 shows the Lansing MA English vowel system.

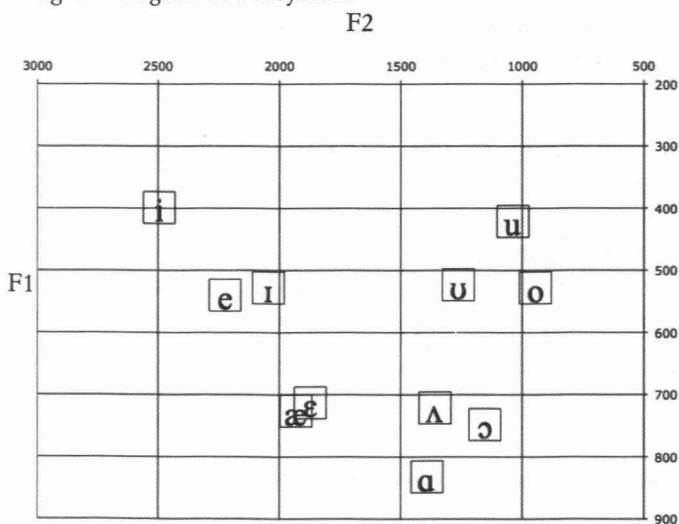


Figure 9. Normalized vowel system of the Lansing MA respondents (Roeder 2006)<sup>5</sup>

In Figures 10 and 11, the MA system is compared to the P&B and NCS systems.



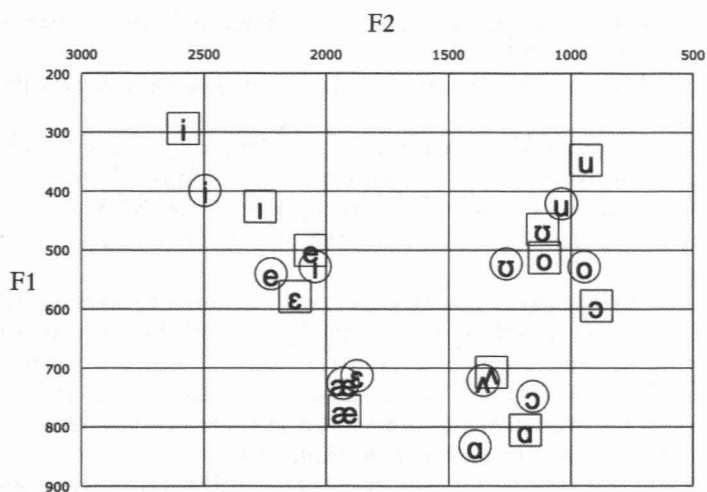


Figure 10. The Lansing MA (Figure 9, circles) and the P&B (Figure 3, squares) systems

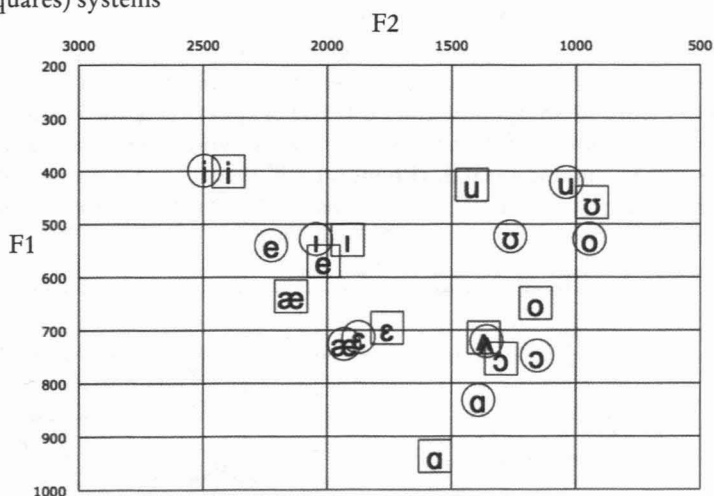


Figure 11. The Lansing MA (Figure 9, circles) and NCS (Figure 4, squares) systems

A comparison with the above predictions will reveal if MA exposure to the NCS in southern Michigan has been influential in the development of their vowel systems.

1) In the high front area, the MA system looks a good deal more like the NCS than the P&B system. Both /i/ and /ɪ/ lie almost directly on top of the NCS system vowels.

2) In the mid front area the MA system is even more like the NCS

system, particularly with regard to the considerably lower /ɛ/ than one influenced by the P&B system.

3) Only /æ/ among the front vowels is positioned more like the P&B system.

4) In the low and low back systems, the MA positioning of vowels is again like the NCS, particularly with regard to the lowered /ɔ/.

5) In the back system in general, where the NCS does not dramatically differ from P&B, the MA system nevertheless shows a higher /o/.

This comparison should make it clear that it will not do to investigate the emerging ethnic vowel systems of immigrants and their offspring by referring to some putative or even real national standard when the principal exposure to the new language is to that of a local norm. Although the phonetic input of the NCS seems to be most influential, however, there are two matters to be explained.

1) Why does the dramatically raised /æ/ vowel of the NCS not show up in the local MA system?

2) Why is the /o/ vowel, one presumably not involved in the NCS, so high?

In these two cases an appeal to forces at work in the development of phonological systems other than those of the phonetic input must be made. Figure 12 shows how the P&B vowel system (Figure 3) may be arranged phonologically, assuming that the long and short (or tense/lax, or peripheral/nonperipheral, although I will refer to these distinctions here as “long” and “short”) distinctions result in two subsystems, with the elements in each subsystem linked as shown.

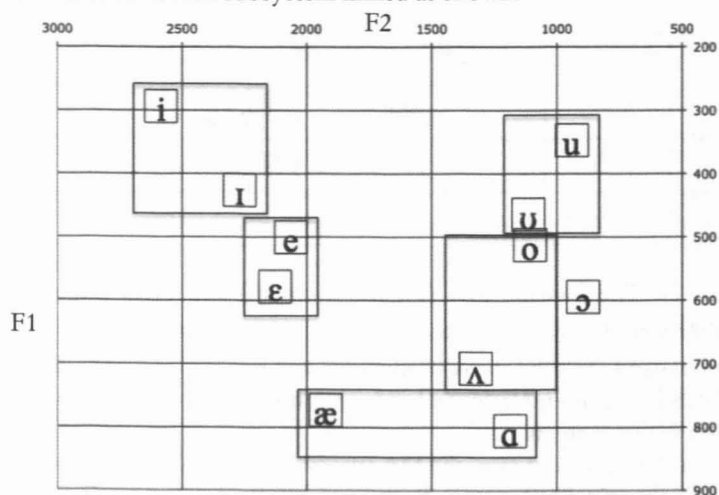


Figure 12. The P&B system (Figure 3) with the pairs of long and short vowels from the two subsystems enclosed in squares (following Giegerich 1992:59)

This American system is already asymmetric or unbalanced due to the loss of the low-back /ɒ/ vowel (LOT) of much English English, one which is often interpreted as the lax partner of /ɔ/ (Giegerich 1992:96).

These lost LOT vowels are realized as either /ɑ/ or /ɔ/ in AE, but that is not the greatest difference in the American system. First, AE eventually develops a single short /ɑ/ class, combining the short vowel of LOT and the long one indicated by the keyword PALM in Wells (1982:xviii-xix), one no longer a suitable long partner for short /æ/ (Labov 1994:1612). Second, in most non-East Coast varieties of AE, the short /æ/ and long /æ:/ sets merge and particularly in the NCS area can be interpreted as a long (ingliding) vowel, written “æh” by Labov 1994 (e.g., 179) and elsewhere. These facts can be linked to an overall trend for AE /ɑ/ and /ɔ/ to lower and front and, taken together, they result in the P&B system (Figures 3 and 12), with even more difficulties of matching long and short pairs than suggested above. Figure 13 shows Labov’s classification of the lexical sets provided in Wells with the modifications outlined just above for AE.

	Short			Long								
				Upliding						Ingliding		
				Front glide			Back glide					
	V			Vy			Vw			Vh		
F	C	B	F	C	B	F	C	B	F	C	B	
H	i KIT		u FOOT	iy FLEECE			iw [j] + GOOSE		uw GOOSE			
M	e DRESS		ʌ STRUT	ey FACE		oy CHOICE			ow GOAT			
L		o LOT			ay PRICE			aw MOUTH		æh TRAP		oh THOUGHT

Figure 13. The basic AE vowel system, showing the resulting classification of the merger of long /ɑ/ (PALM) and short /ɑ/ (AE LOT) as the latter (shown as “o” in Labov’s notation), the merger of short /æ/ (TRAP) and long (ingliding) /æ/ (shown as “æh” in Labov’s notation) as the latter, and the lowering and fronting of /ɑ/ and /ɔ/ (the latter shown as “oh” in Labov’s notation) (modified from Labov 1994:163).

This is a fairly symmetrical system (excluding the /oy/ and /iw/ diphthongs as unusual). The tense-lax pairs in the high and mid vowel sections are straightforward: /iy/-/i/, /uw/-/u/, /ey/-/e/, and /ow/-/ʌ/

(using Labov's notation from Figure 13). The low vowels are not arranged in exactly the same way, but one might argue that the new lax vowel (/o/) has both back (/oh/) and front (/æh/) as tense or long partners, although that is not a traditional interpretation. Whatever solution might be offered, however, this stage of the development of AE looks fairly symmetrical, but the seeds of asymmetry seem to have been sown.<sup>6</sup>

The new tense /æ/ ("æh" in Figure 13) is now subject to Labov's Principle I — "In chain shifts long vowels rise" (1994:116), and Labov considers this raising the triggering event of the NCS (but see Gordon 2001:207-210). Whatever the trigger, the resulting NCS (Figure 5) even more dramatically unbalances this system by the further lowering and fronting of /a/ (LOT or o) and /ɔ/ (THOUGHT or oh), the lowering and backing of /i/ (KIT or i) and /ε/ (DRESS or e), and the backing of /ʌ/ (STRUT), as outlined in Figure 6. Any attempt to show a parallelism for long and short vowels as in Figure 12, with the P&B norms, for Figure 5, a typical NCS system, will not succeed, although I believe the foundation for a reasonable (i.e., more symmetrical) system is there. Here is the MA Lansing system again, this time with an overlay of symmetric oppositions (Figure 14)

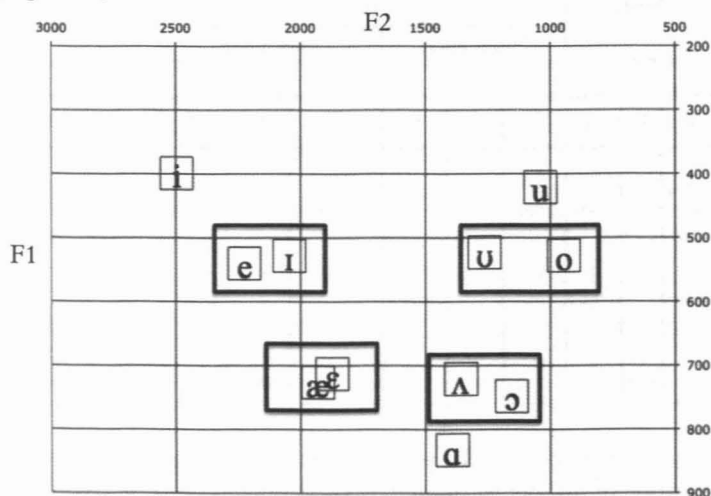


Figure 14. The Lansing MA system with an overlay of tense-lax oppositions.

To accommodate the richer English system, Spanish speakers have had to make two phonological modifications. First, they have had to introduce an additional height distinction (four-way instead of three-way); second, in both the front and back systems, they have had to

introduce a long-short distinction. Although that would have been necessary in the adoption of any English system, Figure 11 has already shown that the influence of the NCS was prominent, with the exception of /æ/ raising and the height of the /o/ vowel. I believe the symmetric pattern shown in Figure 14 explains not only those two exceptions but also suggests very strongly that these learners preferred a symmetric system to one as asymmetrical as the NCS system of Figure 5, which, nevertheless, provided the phonetic impetus for the symmetry they developed.

First, Figure 14 shows that the high and low positions (/i/, /a/, and /u/) correspond precisely to the triangular points of the Spanish system and to many other vowel systems around the world (Maddieson 1984). Second, Figure 14 shows that a long-short distinction has been made for the four pairs of front and back mid-level vowels — /e/~/i/ (FACE~KIT), /æ/~/ε/ (TRAP~DRESS), /ɔ/~/Δ/ (THOUGHT~STRUT, and /o/~/ʊ/ (GOAT~FOOT).

Why is it that the mainstream speakers of the NCS system have apparently settled for the asymmetric pattern of Figure 5 while the MA learners and their descendents have developed the symmetric system outlined in Figure 14? One answer may lie in the way the systems were learned. Labov (2007) distinguishes between *transmission* and *diffusion*; mainstream members of a speech community, who acquire phonetic changes gradually and in such small steps that they go unnoticed, have such changes transmitted to them. This transmission is “phonetic” and may have no influence on a phonological system, at least for some time. It allows apparently asymmetric systems like the NCS since the symmetry of the phonological system is not disrupted. Diffusion, on the other hand, is both “phonetic” and “phonological”; in it, learners are influenced not only by the phonetic input, but also by the learners’ previous system(s) and such universal tendencies as vowel system symmetry (e.g., Martinet 1955). Since the Spanish system is symmetric, this universal tendency may be heightened.

What may come of this? There are at last three possibilities:

1. The MA symmetric system may become more and more available to the baseline speakers through contact and could become the eventual norm of the speech community.
2. The baseline speakers may maintain their poorly organized system, which, through contact that eventually results in transmission to the MA group, whittles away at the symmetric system and becomes the eventual speech community norm.
3. Things may stay like they are, and a distinct MA vowel system may persist alongside the NCS system.

In addition, there are social pressures, such as the expression of ethnic identity through linguistic means (e.g., Fought 2003, Dubois and

Horvath 2003), that will also need to be taken into consideration in looking at the survival of the MA system discussed here, and, in a complete presentation, the processes of acquisition outlined here must be more carefully related to phonological theory. Finally, we will also want to know how well or poorly both groups perceive both sets of production norms, although there is no strict parallelism between perception and production (e.g., Labov 1994:354-55). I conclude here, however, by suggesting that, if nothing more, this analysis of the acquisition and preservation of the specific vowel norms by MA immigrants to southern Michigan shows us that the action is in dialects in contact, not in the abstraction of languages.

Dennis R. Preston, Oklahoma State University  
 Jaclyn Ocumpaugh, Old Dominion University  
 Rebecca Roeder, University of North Carolina Charlotte  
 dennis.preston@okstate.edu

## Notes

- <sup>1</sup> The treatment of emerging phonologies of learners who encounter specific dialects has received prior attention in Escudero and Boersma (2004), Gordon (2000), Konopka and Pierrehumbert (2008), Sawyer (1967), and Roeder (2006).
- <sup>2</sup> The selection of an acoustically verified base American English vowel system is problematic. I adopt here the male (N=33) and female (N=28) Peterson and Barney data derived from a sample provided in Pratt (Boersma and Weenik 2009), with /e/ and /o/ means for male and female respondents, missing from the Peterson and Barney study, added from Stevens (1998, Table 6.2, p. 288). These data were normalized, using the "Labov ANAE (speaker extrinsic)" method in NORM (Thomas and Kendall 2007). The resulting system (Figure 3) corresponds to the outline proposed in Labov et al. (2006:12) as the base system to which ongoing vowel changes in North American English make reference; it should, however, not be regarded as the putative General American system.
- <sup>3</sup> The selection of a base Spanish vowel system is also problematic, although the five-vowel system is simpler. Nevertheless, there has been some discussion about regional differences in Spanish vowel systems (e.g., Quilis and Esgueva 1983, Willis 2005), but I choose to use here the data from South Texas Mexican Americans available in NORM (Thomas and Kendall 2007). Data from Mexico might also be useful, but I have no such appropriate data available, and most of the older respondents discussed here came from Texas.
- <sup>4</sup> I adopt the keywords from the lexical sets for American English from Wells (1982:xviii-xix). Wells unfortunately refers to the set as that of General American, although he modifies that misleading label with the parenthetical note that it is "a variety of" (1982:xviii).
- <sup>5</sup> The vowels collected by Ocumpaugh for the ongoing study in Benton Harbor are not included here since a comparison between them and the Lansing system showed no significant differences.
- <sup>6</sup> Asymmetry did not develop exclusively in the NCS system from this base; the merger of /a/ and /ɔ/ in most of Canada, much of New England, a band of the US Midwest, and

nearly all of the US West was one disruptive element; in the US South, the Southern Shift, perhaps set off by the monophthongization of /ay/, was another (e.g., Labov 1994:214).

## References

- Boersma, Paul and David Weenik 2009. Praat: Doing phonetics by computer, Version 5.1.15. [www.fon.hum.uva.nl/ptraat/](http://www.fon.hum.uva.nl/ptraat/)
- Dubois, Sylvie and Barbara Horvath. 2003. Creoles and Cajuns: A portrait in Black and White. *American Speech* 78.2:192-207
- Eckman, Fred R. 2004. From phonemic differences to constraint ranking: Research on second language phonology. *Studies in Second Language Acquisition* 26.4:513-49.
- Escudero, Paola and Paul Boersma. 2004. Bridging the gap between L2 speech perception research and phonological theory. *Studies in Second Language Acquisition* 26:551-585.
- Fought, Carmen. 2003. *Chicano English in context*. Houndmills, Basingstoke, Hampshire and New York: Palgrave Macmillan.
- Giegerich, Heinz. 1992. *English phonology*. Cambridge: Cambridge University Press.
- Gordon, Matthew H. 2000. Phonological correlates of ethnic identity: Evidence of divergence? *American Speech* 75.2:115-36.
- Gordon, Matthew H. 2001. *Small-town values and big-city vowels: A study of the Northern Cities Shift in Michigan*. (Publication of the American Dialect Society Number 84). Durham NC: Duke University Press.
- Ito, Rika. 1999. *Diffusion of urban sound change in rural Michigan: A case of the Northern Cities Shift*. Unpublished PhD Dissertation, East Lansing: Michigan State University.
- Konopka, Kenneth and Janet Pierrehumbert. 2008. Vowels in contact: Mexican Heritage English in Chicago. *Texas Linguistic Forum* (Proceedings of the Sixteenth Annual Symposium About Language and Society – Austin [SALSA]) 52: 94-103.
- Labov, William. 1994. *Principles of linguistic change: Internal factors*. Oxford UK & Cambridge USA: Blackwell.
- Labov, William. 2007. Transmission and diffusion. *Language* 83.2:344-387.
- Labov, William. 2009. *PLOTNIK*. [www.ling.upenn.edu/~wlabov/Plotnik.html](http://www.ling.upenn.edu/~wlabov/Plotnik.html)
- Labov, William, Sharon Ash, and Charles Boberg. 2006. *The Atlas of North American English*. Berlin & New York: Mouton de Gruyter.
- Maddieson, Ian. 1984. *Patterns of sound*. Cambridge: Cambridge University Press.
- Martinet, André. 1955. *Economie des changements phonétique*. Berne: A. Francke.
- Peterson, Gordon E. and Harold Barney. 1952. Control method used in a study of the vowels. *Journal of the Acoustical Society of America* 24: 175-84.
- Preston, Dennis R. 2005. How can you learn a language that isn't there? In Katarzyna Dziubalska-Kolaczyk and Joanna Przedlacka (eds). *English pronunciation models: A changing scene* (Linguistic Insights: Studies in Language and Communication 21). Bern – Berlin – Bruxelles – Frankfurt am Main – New York – Oxford – Wien: Peter Lang, 37-58.
- Sawyer, Janet B. 1967. A dialect study of San Antonio, Texas, a bilingual community. Unpublished PhD Dissertation. Austin: University of Texas.
- Quilis, Antonio and Manuel Esgueva. 1983. Fonemas vocálicos españoles. In Manuel Esgueva and Margarita Cantarero (eds). *Estudios de fonética*. Madrid: Consejo

- Superior de Investigaciones Scientificas Instituto Miguel de Cervantes, 159-252.
- Roeder, Rebecca. 2006. *Accommodation to the Northern Cities Shift among Mexican Americans in Lansing, Michigan*. Unpublished PhD dissertation, East Lansing: Michigan State University.
- Stevens, Kenneth N. 1998. *Acoustic phonetics*. Cambridge MA, USA/London, England: The MIT Press.
- Thomas, Erik R. and Tyler Kendall. 2007. NORM: The vowel normalization and plotting suite. <http://ncslaap.lib.ncsu.edu/tools/norm/>
- Trudgill, Peter. 1986. *Dialects in contact*. Oxford UK & Cambridge USA: Blackwell.
- Wells, John C. 1982. *Accents of English I: An introduction*. Cambridge: Cambridge University Press.
- Willis, Erik W. 2005. An initial examination of Southwest Spanish vowels. *Southwest Journal of Linguistics* 24, 1&2: 185-98.